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'Cardan' **green ash**



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'Cardan' green ash was released in May 1979 by the United States Department of Agriculture, Soil Conservation Service (SCS), and the Agricultural Research Service (ARS) for conservation plantings in the northern Great Plains.

Description

Cardan green ash, *Fraxinus pennsylvanica* Marsh., is a medium-size to tall tree. The crown is rounded with small, slender, spreading branches. Cardan is recommended for use in farmstead and field windbreaks and as a deciduous hardwood component of wildlife habitat and natural area plantings used to revegetate surface-mined lands, flood plains, and other disturbed areas.

Cardan may grow to 50 feet on favorable soils. The bark is ashy gray, shallowly furrowed, with narrow interlacing ridges. The leaves are opposite, pinnately compound with seven (rarely five or nine) leaflets. The leaflets are ovate to elliptic, with slightly toothed margins that are often smooth below the middle. The upper part of the leaflet is dark green and smooth; the lower part is pale green with minute

scattered hairs on the midrib. Individual trees are either male or female. The nonshowy flowers appear early in May. The seed matures by September and often remains on the tree well into the winter. The winged fruit is about 1/8 to 1/6 of an inch long and 1/6 to 1/4 of an inch wide with a pointed, or slightly notched, apex.

This selection of green ash has been tested as Mandan-12002 at the Northern Great Plains Research Center, Mandan, North Dakota. It originated from open-pollinated seed collected in 1954 from several trees growing in a farmstead windbreak near Carlyle, Montana. Advanced evaluation testing showed excellent survival and growth rate superior to that of common green ash.

Adaptation

Cardan performs well on a wide range of soils throughout the northern Great Plains. It is not recommended for use south or east of its primary area of adaptation. (See the adaptation map.)



'Cardan' can be used in farmstead and field windbreaks.


Establishment

In the temperate zone, Cardan should generally be planted in the spring as soon as the ground is frost free. The recommended spacing between plantings is 8 to 12 feet. Two-year-old seedlings are suitable for mechanical planting.

Cardan has performed well on a wide range of soils and climatic conditions typical of the northern Great Plains. Performance data show that clean cultivation is the primary factor affecting survival and rate of growth. Performance may be adversely affected by drought or injury caused by animals, insects, disease, and herbicides.

Propagation

Cardan green ash is best propagated by planting stratified seed. The dry seed are soaked 21 days in cold running water, placed for 10 days in moist sand or peat moss at 32 to 41 degrees F or until seed germinate, and then planted immediately. Seed should be covered with 3/4 of an inch of soil at a bed density of 10 to 20 seed per square foot.

 **Area of adaptation of
'Cardan' green ash.**



Availability

The ARS, Northern Great Plains Research Center, Mandan, North Dakota, maintains breeder seed and foundation stock of Cardan green ash. Certified seed (selected class) will be available through the SCS, Plant Materials Center, P.O. Box 1458, Bismarck, North Dakota, 58502.

For more information on where you can buy Cardan green ash and how to use and plant it, contact your local SCS office. It is listed in your telephone directory under United States Government, Department of Agriculture, Soil Conservation Service.

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